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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,329	12/02/2005	Takaomi Nakayama	4626.P0002US	8404
23474 7590 06/04/2009 FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631				
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ZHENG, LOIS L				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/537,329

Applicant(s)

NAKAYAMA ET AL.

Examiner

LOIS ZHENG

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 April 2009 has been entered.

Status of Claims

2. Claims 3, 6, 10, 12 and 14-18 are amended in view of applicant's amendment filed 14 April 2009. Therefore, claims 3-18 are currently under examination.

Status of Previous Rejections

3. All previous rejections are withdrawn in view of applicant's persuasive arguments and claim amendments filed 14 April 2009.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 3-7, 10, 13-15 and 18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/480,841 (i.e. US 2004/0244874 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-18 of copending Application No. 10/480,841 teaches a treating solution that comprises substantially the same amount of zirconium or titanium compounds, substantially the same amount of free fluorine ions and the same pH. claims 1-18 of copending Application No. 10/480,841 also teaches the same presence of nitric acid, the same at least one oxygen acid, the same polymer and the same surfactant. Claims 10 of copending Application No. 10/480,841 further teaches that the treatment solution is applied by electrolysis and teaches the same coating weight on iron and zinc surfaces.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 8-9, 11-12 and 16-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/480,841 (i.e. US 2004/0244874 A1) in view of Bittner et

al. WO 2002/024344, whose corresponding US Patent Application Publication is US 2003/0185990 A1(Bittner).

The teachings of the claims of copending Application No. 10/480,841 are discussed above. However, these claims do not explicitly teach the subsequent treatment with a solution comprising polymer compounds or Co, Ni, Sn, Cu and Ti/Zr as claimed and the aluminum and magnesium metal material as claimed.

Bittner teaches a metal surface coating solution comprising corrosion inhibitors such as Zr /Cr phosphate or carbonates(paragraph 0034), complex and free fluorides (paragraph 0037), polymers(paragraph 0028) and hydrogen peroxide(paragraph 0117). Bittner further teaches that the coating treatment can be followed by another treatment with a coating bath that comprises substantially the same components such as corrosion inhibitors, complex and free fluorides and polymers.

Regarding claims 8-9 and 11-12, one of ordinary skill in the art would have found it obvious to have found it obvious to repeated the coating treatment of copending Application No. 10/480,841 as suggested by Bittner in order to achieve desired coating thickness and corrosion protection as taught by Bittner.

Regarding claims 16-17, since Bittner teaches a substantially similar coating composition as the coating composition of copending Application No. 10/480,841, and Bittner further teaches that its coating solution can be applied to metal surfaces such as aluminum, iron, magnesium, zinc and their alloys(paragraph 0073), one of ordinary skill in the art would have found it obvious that the coating solution of copending Application No. 10/480,841 can be applied to magnesium metal surface with expected success. In

addition, even though copending Application No. 10/480,841 in view of Bittner do not explicitly teach the claimed amount of coating weight, one of ordinary skill in the art would have found it obvious to have varied the amount of surface treatment time during the process of copending Application No. 10/480,841 in view of Bittner in order to produce desired coating thickness or coating weight to achieve the desired corrosion protection.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-7, 9, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frelin et al. US 4,313,769(Frelin).

Frelin teaches a process for coating aluminum or aluminum alloy with a conversion coating solution comprising about 0.75×10^{-3} mol/l of Zr(col. 6 lines 42-54), not greater than about 500ppm of free fluoride(col. 4 line 33 – col. 5 line 39), about 80- about 100ppm of Ca(col. 11 line 59 - col. 12 line 5), nitric acid for pH adjustment(col. 5 lines 55-59, col. 6 lines 52-54, col. 10 line 20), boric acid(col. 6 lines 21-24), at least one water-soluble and water-dispersible polymer compounds(col. 5 line 60 – col. 6 line 16), and nonionic surfactant(col. 5 lines 40-48).

Regarding claims 18 and 3-7, the component concentrations in the coating solution of Frelin either read on or overlap the claimed coating component concentrations. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating component concentration ranges from the disclosed ranges of Frelin would have been obvious to one skilled in the art since Frelin teaches the same utilities in its' disclosed coating component concentration ranges.

Regarding claim 9, Frelin further teaches that the coated aluminum surface is rinsed with water and then subject to a sanitary or siccative coating(i.e. organic coating)(col. 8 line 60 - col. 9 line 6).

Regarding claim 16, even though Frelin does not explicitly teach the claimed amount of coating weight on aluminum, one of ordinary skill in the art would have found it obvious to have varied the amount of surface treatment time during the process of Frelin in order to produce desired coating thickness or coating weight to achieve the desired corrosion protection on aluminum metal materials.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frelin, and further in view of Bittner et al. WO 2002/024344, whose corresponding US Patent Application Publication is US 2003/0185990 A1(Bittner).

The teachings of Frelin are discussed in paragraph 8 above. However, Frelin does not explicitly teach the subsequent treatment with a solution comprising polymer compounds or Co, Ni, Sn, Cu and Ti/Zr as claimed.

Bittner teaches that a metal surface coating solution can be applied multiple times to increase corrosion prevention(paragraph [0066]).

Therefore, one of ordinary skill in the art would have found it obvious to have found it obvious to repeated the coating treatment of Frelin as suggested by Bittner in order to achieve desired coating thickness and corrosion protection as taught by Bittner.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frelin, and further in view of Bartik-Himmler et al. US 6,627,006 B1(Bartik-Himmler) .

The teachings of Frelin are discussed in paragraph 8 above. However, Frelin do not explicitly teach that the metal surface is not cleaned or degreased prior to the coating treatment.

Bartik-Himmler et al. US 6,627,006 B1(Bartik-Himmler) teaches a metal surface coating solution comprising complex and free fluorides(col. 4 lines 41-54), Ca/Mg ions(col. 4 lines 26-27), nitrate ions(col. 5 lines 10-18), and accelerators such as hydrogen peroxide and nitrite ions(col. 5 lines 5-6). Bartik-Himmler further teaches that the metal surface can be treated with a cleaning bath containing anionic and/or nonionic surfactants(col. 6 lines 40-42).

Regarding claim 13, in light of the teachings from Bartik-Himmler, one of ordinary skill in the art would have found it obvious to have eliminated the cleaning/degreasing step prior to the coating treatment step in the process of Frelin since the coating solution of Frelin already contain nonionic surfactant that would have been present in the cleaning pretreatment solution as taught by Bartik-Himmler.

11. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frelin, and further in view of Reghi US 4,338,140(Reghi).

The teachings of Frelin are discussed in paragraph 8 above. However, Frelin do not explicitly teach that the metal surface is an iron or a zinc surface as claimed.

Reghi teaches a process for treating metal surfaces such as iron, zinc or aluminum with an acidic aqueous coating solution comprising zirconium, fluoride, organic polymer such as tannin, nitric acid for pH adjustment (abstract, col. 5 lines 23-41). The coating component concentrations as taught by Reghi are similar to the component concentration of Frelin.

Regarding claims 14-15, one of ordinary skill in the art would have found it obvious to have applied the coating solution of Frelin to iron and zinc surfaces with expected success since Reghi teaches a significantly similar coating solution that can also be applied to iron and zinc surfaces with success.

In addition, even though Frelin in view of Reghi do not explicitly teach the claimed amount of coating weight on aluminum, one of ordinary skill in the art would have found it obvious to have varied the amount of surface treatment time during the process of Frelin in view of Reghi in order to produce desired coating thickness or coating weight to achieve the desired corrosion protection on metal surfaces.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frelin, and further in view of Tomlinson US 5,380,374 (Tomlinson).

The teachings of Frelin are discussed in paragraph 8 above. However, Frelin do not explicitly teach that the metal surface is a magnesium surface as claimed.

Tomlinson teaches a process for treating metal surfaces such as iron, aluminum or magnesium with an acidic aqueous coating solution comprising zirconium, fluoride,

calcium, organic polymer such as tannin and nitric acid for pH adjustment(abstract, col. 3 lines 55-63). The coating component concentrations as taught by Tomlinson are similar to the component concentration of Frelin.

Regarding claims 14-15, one of ordinary skill in the art would have found it obvious to have applied the coating solution of Frelin to magnesium surfaces with expected success since Tomlinson teaches a significantly similar coating solution that can also be applied to magnesium surfaces with success.

In addition, even though Frelin in view of Tomlinson do not explicitly teach the claimed amount of coating weight on aluminum, one of ordinary skill in the art would have found it obvious to have varied the amount of surface treatment time during the process of Frelin in view of Tomlinson in order to produce desired coating thickness or coating weight to achieve the desired corrosion protection on metal surfaces.

13. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frelin, and further in view of JP04-107290(JP'290).

The teachings of Frelin are discussed in paragraph 8 above. However, Frelin do not explicitly teach that the coating solution is applied electrolytically wherein the metal substrate is a cathode.

JP'290 teaches cathodic electrodeposition process to form an uniform and stable color coating on a metal surface at ordinary temperature, in a short time, and at a low cost using a coating solution comprising a zirconate(abstract).

Regarding claim 10, it would have been obvious to one of ordinary skill in the art to have incorporated the cathodic electrodeposition coating technique as taught by

JP'290 into the coating process of Frelin in order to produce a an uniform and stable color coating on a metal surface at ordinary temperature, in a short time, and at a low cost as taught by JP'290.

Regarding claim 12, the instant claim is rejected for the same reason set forth in the rejection of claim 9 above.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frelin in view of JP'290, and further in view of Bittner.

The teachings of Frelin in view of JP'290 are discussed in paragraph 13 above. However, Frelin in view of JP'290 do not explicitly teach the subsequent treatment with a solution comprising polymer compounds or Co, Ni, Sn, Cu and Ti/Zr as claimed.

Bittner teaches that a metal surface coating solution can be applied multiple times to increase corrosion prevention(paragraph [0066]).

Therefore, one of ordinary skill in the art would have found it obvious to have found it obvious to repeated the coating treatment of Frelin in view of JP'290 as suggested by Bittner in order to achieve desired coating thickness and corrosion protection as taught by Bittner.

Response to Arguments

15. Applicant's arguments filed 14 April 2009 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hatano et al. US 5,259,937 teaches a cathodic electrodeposition process using a chromium solution that also contains 20-1000ppm of zirconium and 10-400ppm of fluoride.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

LLZ